Modernizing IT and Engineering to Drive Innovation in Banking and Payments

Advancing technologies to transform financial services

Digital Commerce Bank

Introduction

Paul Twigg

Chief Technology Officer

CTO at Digital Commerce Bank

25 years' of IT experience

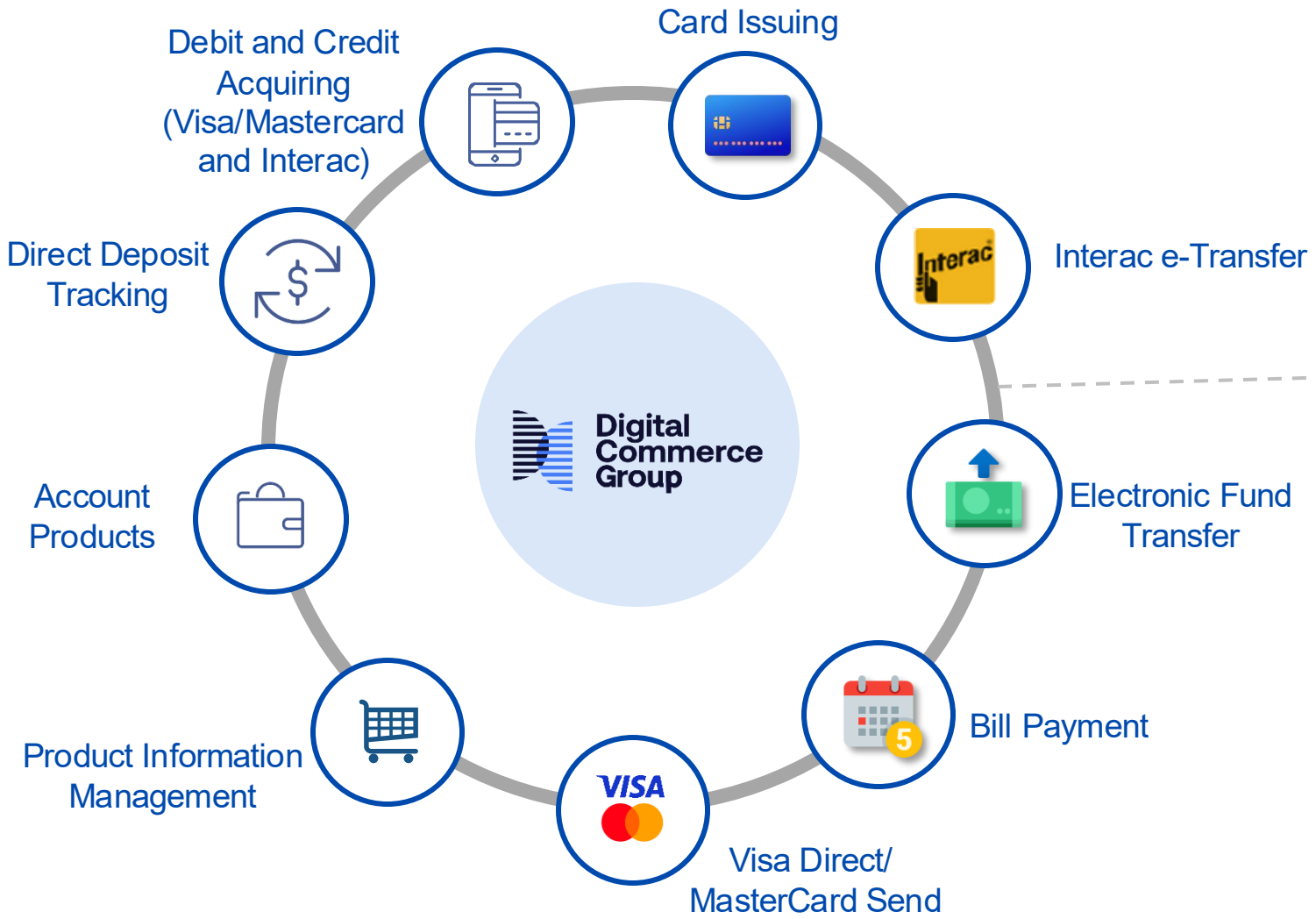
Previous CTO at NTT DATA (Canada)

Innovation Lead for Startups at NTT DATA

Passionate about Technology

Football is coming home!

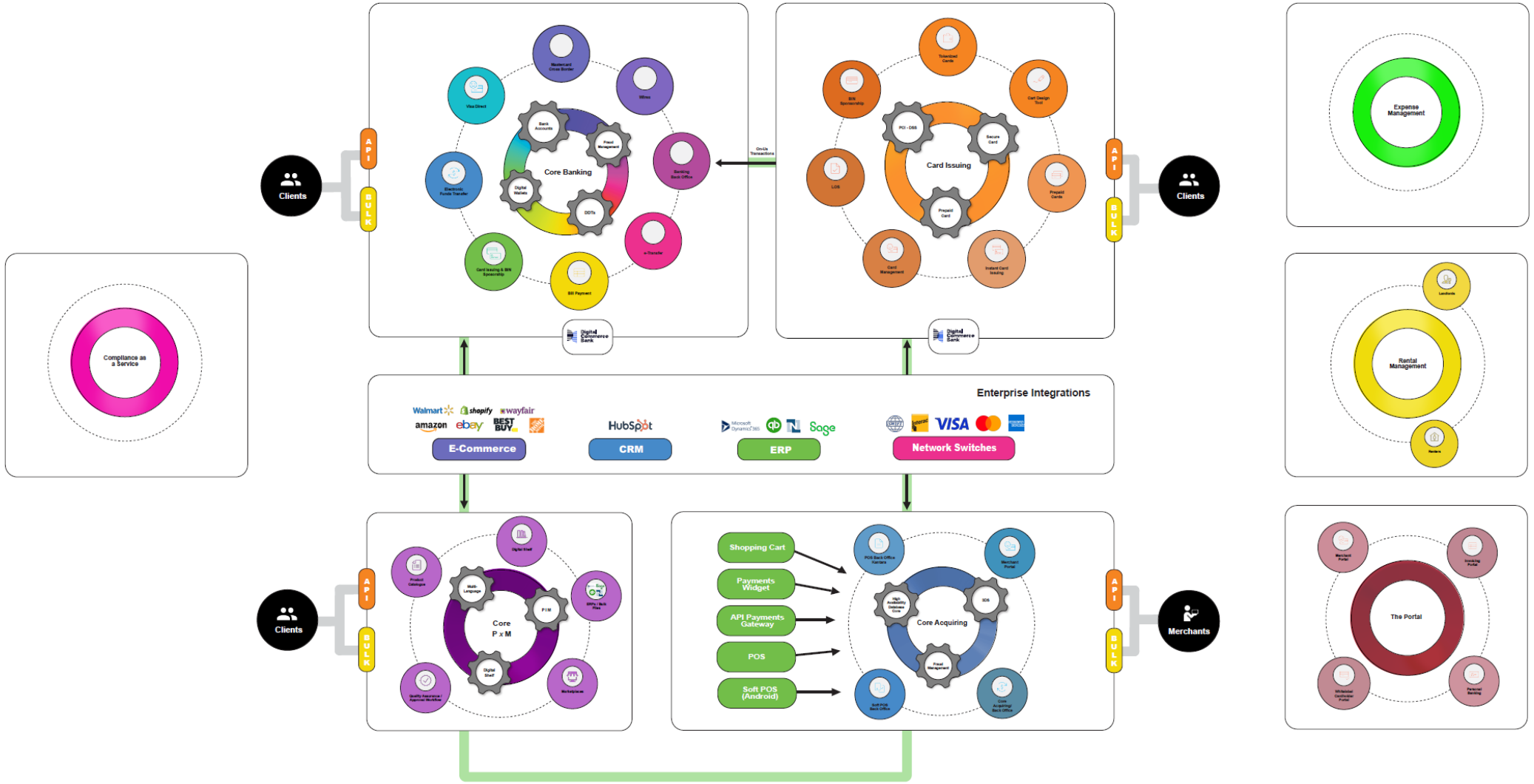
Product Overview – Business Perspective



Real Time Rails (RTR)

- Launching Canadian RTR in 2026, as soon as available
- One of only 2 banks that will be ready to launch in Group 1
  - Only Canadian bank launching in Group 1

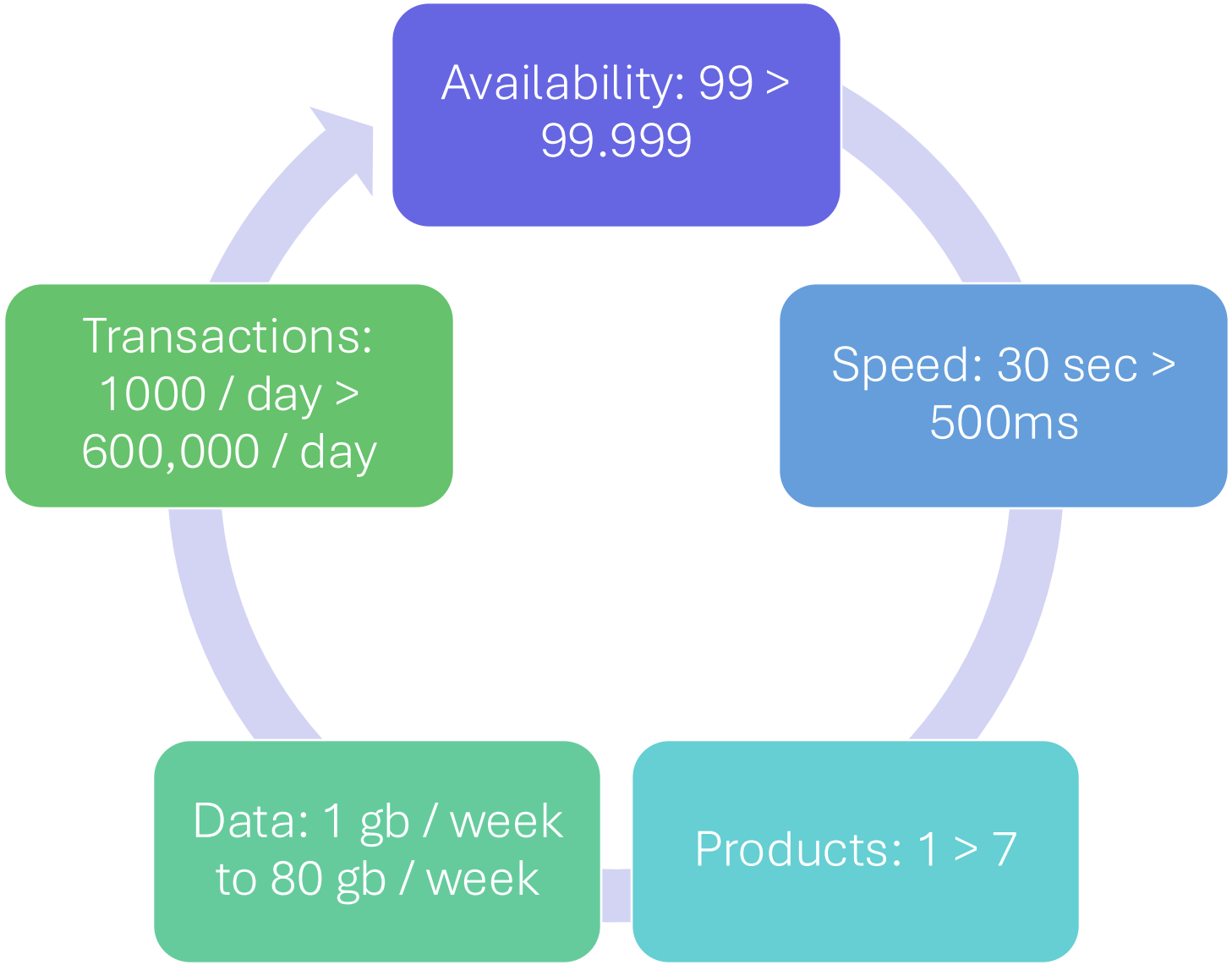
Product Overview – Technology Perspective



Corporate Strategy

CEO	President	VP of AI	CISO
2026: Make more $$$	Stability and New Features	Agents Everywhere	Secure the data
2025: Make more $$$	Stability and New Features	Modularize the Data	Secure the data
2024: Make more $$$	Stability and New Features		Data Scalability
2023: Make more $$$	Stability and New Features		Data Performance
2022: Make tech work	Stability and New Features		Understand data

Results of the IT Modernization



The Shift Happening in Banking

Drivers of Banking Shift

Customer demands and fintech competition are accelerating banking transformation to real-time and data-driven services. Everyone can bank with a Wallet – not necessarily with an Account.

Technological Innovations

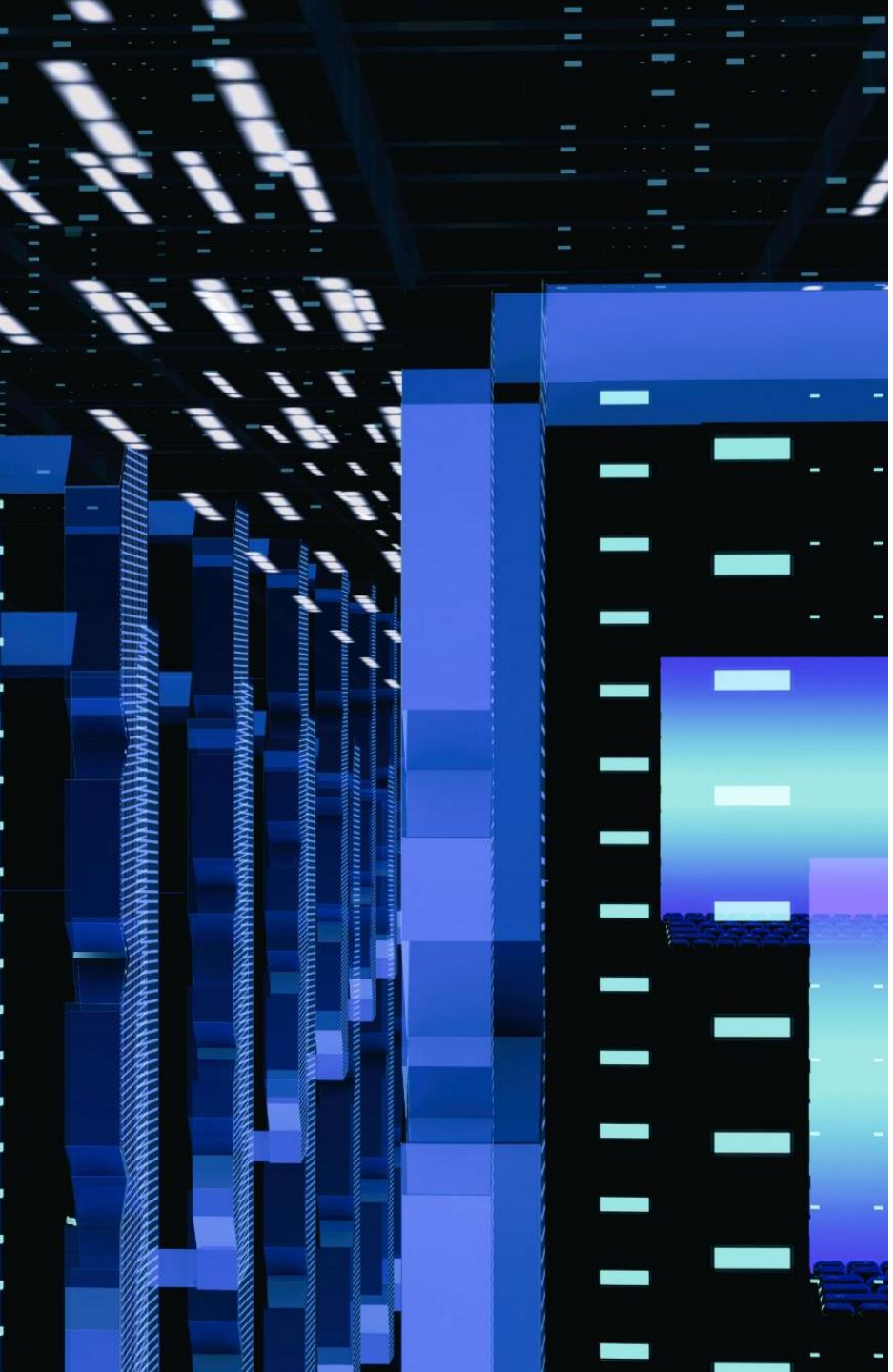
AI and advanced analytics speed innovation cycles enabling faster launch of new financial capabilities.

Legacy System Constraints

Outdated batch processing and siloed data systems limit innovation and struggle to meet modern customer needs.

Need for Modernization

The widening gap between customer expectations and legacy capabilities makes modernization imperative for banks.



From Legacy Systems to Digital Platforms

Legacy System Characteristics

Traditional IT systems rely on monolithic cores and batch processing, causing slow, risky change cycles.

Modern Digital Platform Features

New platforms are event-driven, share data enterprise-wide, and support independently evolving services. Cloud Native? OpenShift? Docker?

Faster Change and Experimentation

Change cycles reduce from months to days, enabling rapid experimentation and delivery.

Architectural Philosophy Shift

Modernization prioritizes adaptability, speed, and real-time responsiveness over traditional methods. Modular? Repeatable?

What Modernization Actually Means

Decoupling Systems

Modernization requires decoupling systems by business domains to enable independent team progress without systemic risk.

Standardization of Interfaces

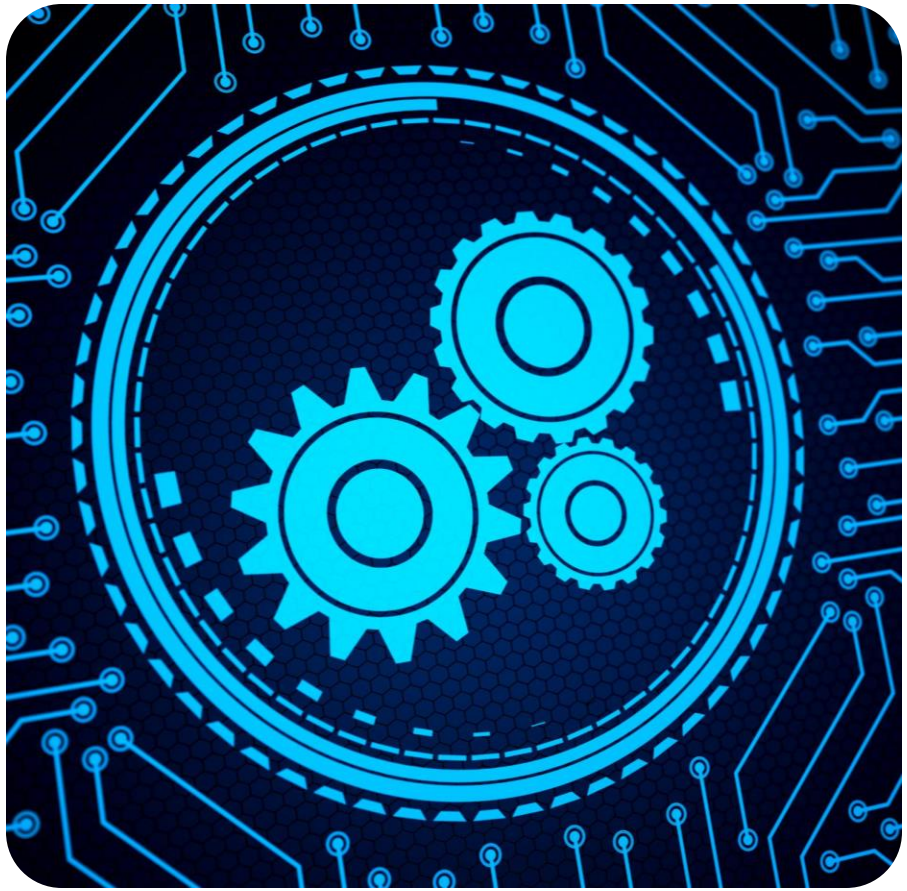
Standard APIs, events, and data contracts reduce integration complexity and enable greater ecosystem participation.

Automation and Reliability

Automating delivery pipelines and infrastructure increases reliability while minimizing manual work and errors.

Resilience by Design

Designing for failure builds resilience, acknowledging outages and partial failures as part of system reality.



Enterprise Data Is the Foundation

Enterprise-owned Data Model

Organizations must adopt enterprise-owned data models to enable reuse across analytics and digital products.

Real-Time Data Pipelines

Real-time data pipelines provide immediate insights for fraud prevention, customer engagement, and monitoring.

Governance for Speed

Data governance should enable speed and agility, avoiding delays caused by excessive controls.

Data Quality as Production Concern

Ensuring data quality is essential for reliable AI models and scalable automation in banking.

AI in Banking: From Hype to Production

Data Governance Importance

Clean, timely, and well-governed data is essential for AI to deliver value in banking.

Production-Grade AI Systems

Banks are deploying AI systems in real time beyond pilots to improve operational efficiency.

High-Impact Use Cases

Applications include fraud detection, AML monitoring, payment routing, and engineering productivity.

Integration with Modern Platforms

AI is tightly coupled with platform modernization, data architecture, and regulatory compliance.

Real-Time Payments (RTR) in Canada

Instant Digital Payments

RTR enables instant, irrevocable account-to-account payments available 24/7, revolutionizing payment speed and convenience.

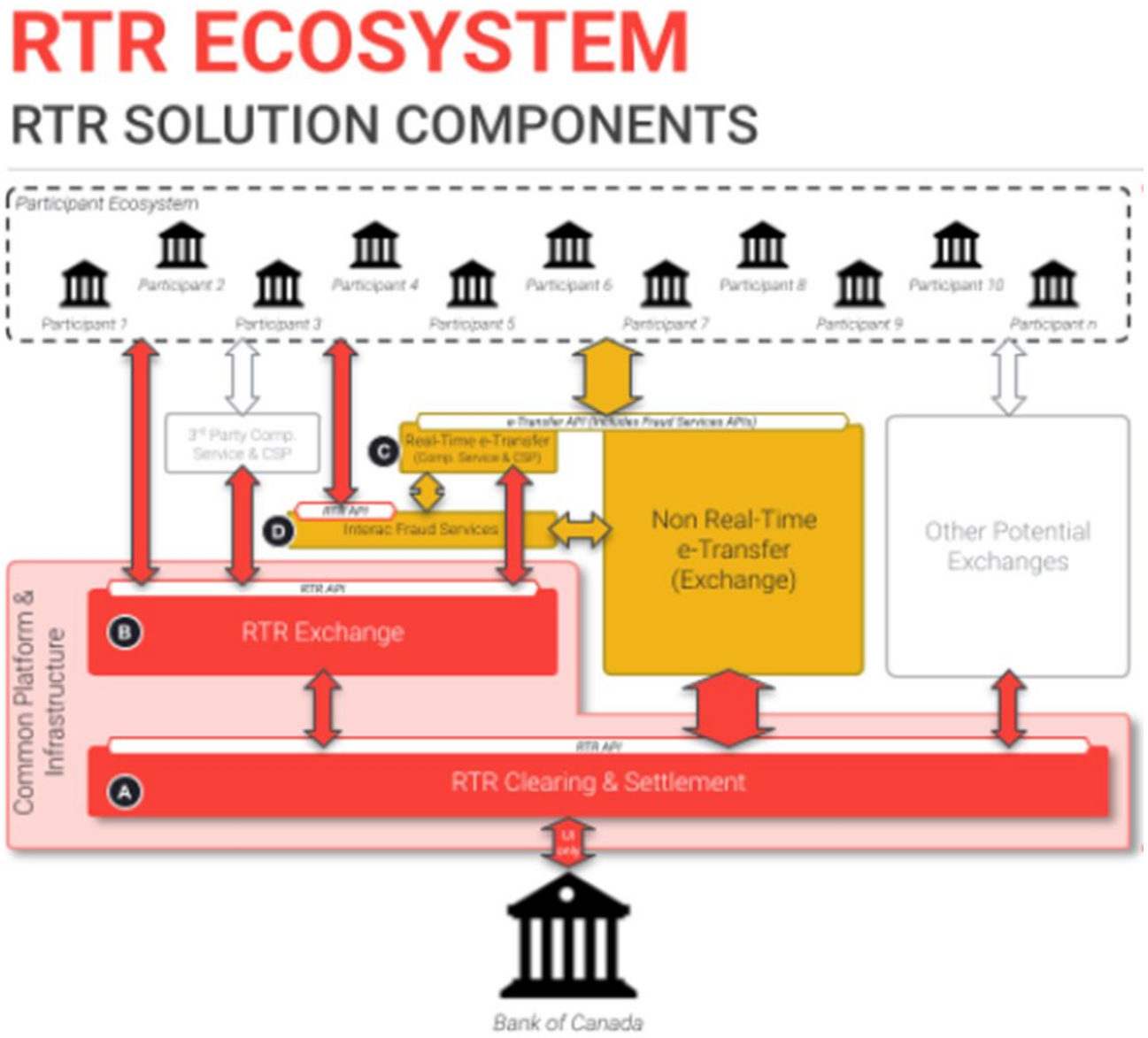
Customer Experience & Risk

RTR shifts payments to a real-time product impacting customer experience and exposing risks faster than legacy systems.

Infrastructure Modernization

RTR exposes system weaknesses, driving IT and engineering modernization across banks and fintech companies.

Real-Time Payments (RTR) in Canada



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Being a First Mover Is Different

Unique Challenges for Early Adopters

First movers in real-time payments face uncertain traffic patterns and lack mature failure playbooks to guide them.

Demand for Real-Time Operations

Real-time payments require immediate fraud detection, incident response, and minimal manual intervention to maintain security.

Engineering Mindset Shift

Engineering teams must adopt an always-on approach with proactive monitoring and shared ownership of systems.

Organizational and Technical Transformation

Implementing real-time payments early drives both organizational change and technical innovation simultaneously.

Engineering for Scale and Zero Downtime

Resilient Active-Active Architecture

Active-active systems eliminate single points of failure and enable maintenance without downtime.

Safe Incremental Deployments

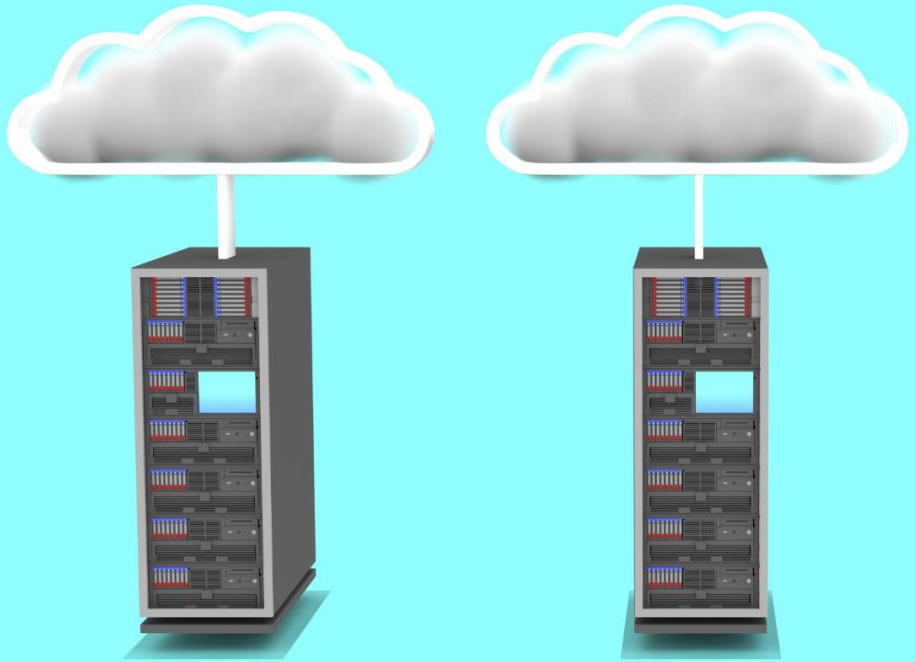
Backward-compatible deployments and feature flags allow safe, gradual changes in production environments.

Progressive Rollouts and Feedback

Progressive rollouts reduce risk by limiting blast radius and collecting early user feedback.

Graceful Degradation Strategies

Systems maintain partial functionality under stress instead of complete failure.



Multi-Cloud and On-Prem Reality

Hybrid Environment Necessity

Banks use hybrid environments combining on-premise and multiple cloud platforms due to regulations and data requirements.

Cloud Benefits

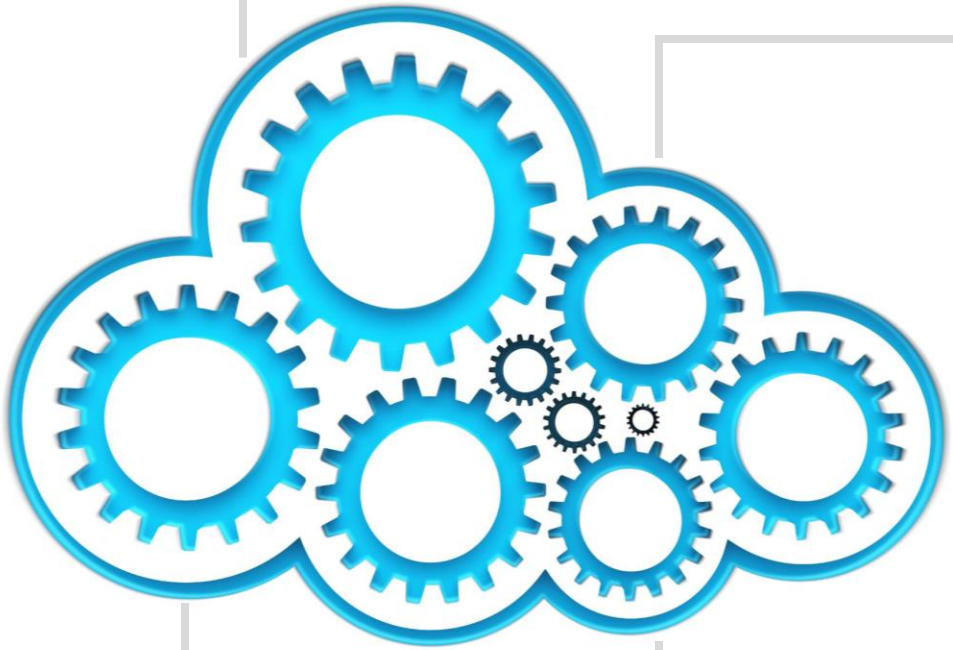
Cloud platforms offer elasticity, global reach, and managed services that drive faster innovation in banking.

Consistent Architecture

Success depends on consistent architectural patterns, standard interfaces, and shared tooling across hybrid environments.

Why Modernization Fails

Risks of Big-Bang Transformations
Large-scale transformation attempts often introduce excessive risk and stall due to overwhelming complexity.



Underestimated Data Complexity
Ignoring data complexity leads to integration and quality problems downstream in modernization projects.

Misuse of Cloud Platforms
Treating cloud environments like traditional data centers limits agility and resilience benefits.

Neglected Operational Readiness
Delaying operational readiness causes fragile systems that are hard to support in production.

Engineering at the Speed of Money

Focus on Reliable Engineering
Innovation depends on deliberately engineered systems that operate safely and reliably at financial speeds.

Modern Platforms and Data
Strong data foundations and modern platforms are essential for continuous banking innovation and resilience.

Long-Term Modernization
Treat modernization as a continuous capability to unlock faster innovation and reduce risk over time.